

REMARKS

Claims 1-59 are pending. Claims 1-59 are rejected. Claims 1-3, 5, 6, 8-12, 14-21, 23, 24, 28, 31-35, 37-41, 43, 47-49, 55, 57 and 59 are amended. Claims 7, 52 and 58 are cancelled, without prejudice. This Response is filed in reply to the Office Action dated March 2, 2004.

Amendments to the claims are not an acquiescence to any of the rejections. Furthermore, silence with regard to any of the Examiner's rejections is not an acquiescence to such rejections. Specifically, silence with regard to Examiner's rejection of a dependent claim, when such claim depends from an independent claim that Applicant considers allowable for reasons provided herein, is not an acquiescence to such rejection of the dependent claim(s), but rather a recognition by Applicant that such previously lodged rejection is moot based on Applicant's remarks and/or amendments relative to the independent claims (that Applicant considers allowable) from which the dependent claim(s) depends. Applicant reserves the option to further prosecute the same or similar claims in the instant or a subsequent application. Upon entry of the Amendment, claims 1-6, 8-51, 53-57 and 59 are pending in the present application.

With respect to the Office Action dated March 2, 2004, Applicant provides the following comments. Applicant traverses the Examiner's rejections under 35 U.S.C. §112, 35 U.S.C. §102(b) and 35 U.S.C. §103(a), and respectfully requests reconsideration in view of the amendments and remarks.

Applicant has submitted a Supplemental Information Disclosure Statement dated March 17, 2004, as requested by the Examiner. With respect to the defective oath or declaration, Applicant submits an Application Data Sheet identifying Applicant's mailing address.

With respect to the claim objections due to informalities and rejections under 35 U.S.C. §112, second paragraph, the amendments to the claims serve to correct formalities, to improve the terminology used, and/or to conform to the Examiner's comments.

With respect to the rejections under 35 U.S.C. §§102 and 103(a), Applicant's independent claim 1 is amended to indicate that the combining step involves overlaying of the image obtained by the solar blind UV (SBUV) imaging unit over the visible image obtained by the visible imaging unit, thereby forming one combined visual image showing the SBUV emittance on the background scenery. As also indicated in amended claim 1, this is done while keeping the SBUV emittance at its exact location with respect to the visible background scenery.

As provided in the application, one object of the methods and apparatus described therein is to enable viewing of a UV emittance, overlaid over the natural background, thereby enabling a user to determine in a simple manner, and with no other special mechanism, the location of the source of the UV emittance. This is done even in full daylight illumination.

In section 9 (d) of the Office Action the Examiner states that Dirscherl et al. (U.S. Patent No. 5,001,348) discloses ... "combining said two images into a combined visual image". Applicant respectfully suggests that the "combining" of Dirscherl, if such term can be used with relation to the Dirscherl method at all, is significantly different than Applicant's "combining" step, which includes the overlaying, as recited in Applicant's claim 1.

Applicant agrees that Dirscherl et al., in Figs. 9-12, disclose an apparatus for multi-spectral imaging, and that the apparatus of Dirscherl et al. obtains separate images, each of different spectrum (IR, VIS, UV (also solar blind UV)) from the scene. However, Dirscherl et al. fail to disclose overlaying of the UV image produced by the SBUV imaging unit over the visible image produced by the visible imaging unit, thereby forming one combined

visual image showing the UV emittance and the background scenery, while keeping the UV emittance at its exact position within the scene.

As the Examiner correctly noted, the object of the invention of Dirscherl et al. is to detect UV emittance from objects such as a rocket or a rocket plume. Dirscherl et al., in column 11, lines 7-12, disclose that "... three identical images I, II and III are displaced in parallel on the CCD – matrix, compare Fig.12." As is further elaborated in Dirscherl et al., column 11, lines 7-17 and in Figs. 9-12, the images that are obtained in parallel are displayed one besides the others, they are absolutely not overlaid one over the other. Therefore, Dirscherl et al. does not produce a visual image enabling a user to view the UV image, within its real scenery. In Dirscherl et al., the images in the two or three different spectral ranges (UV, IR, VIS) are displaced in parallel zones on the CCD, Xsub1, Xsub2 and Xsub3. The displacements of spacing "a" are constant among the objects (column 11 lines 27-31). The images VIS, UV, IR are shown separately, the images of the target in the different spectral ranges are analyzed separately, and processed and evaluated separately.

Moreover, while one object of Applicant's methods and apparatus described in the application is to enable visualizing and locating of a UV source, based on providing the observer a combined-overlaid image, the object of Dirscherl et al. is to evaluate a "plume signature" of the source (see abstract, col. 1, lines 55-58, and col. 2, lines 17-26). In the summary of the invention in column 1, lines 62-68, Dirscherl et al. describe: "The output signals from the UV sensor pass through an image read-out unit which is connected with its output to an image processing stage, including a computer which compares the image signals with stored previously known patterns of a determined spectral or "plume signature" for a reliable recognition and/or a plausibility control". Applicant's specification does not describe such "plume signature" evaluation and determination.

Therefore, in Dirscherl et al., the object is to detect and verify a signature of the plume, and if location is necessary, use of a special location processing and means are necessary. Using Applicant's methods and apparatus, on the other hand, the user can locate the UV emittance in a purely visual manner, without any further location and/or processing

mechanism, as both the UV image and the visual background are brought to him overlaid one over the other as a combined image. A purely visual location determination cannot be obtained by using the "combined" image as shown in Fig. 12 of Dirscherl et al. Moreover, the user of Applicant's apparatus can identify and locate the UV emitting source in an immediate fashion, as there is no need for any further location processing and analysis.

As recited in the claims, the overlaying in Applicant's solar blind UV viewing method of claim 1 is made electronically by means of combining two CCD outputs and displaying the outcome on a video display unit, or includes purely optical combining means, wherein the images are superimposed by an optical beam combiner enabling direct viewing by human observer.

While Applicant notes that there are many other differences between Applicant's methods and apparatus and the invention of Dirscherl et al., Applicant respectfully suggests that the above remarks and the amendments to the claims sufficiently distinguish Applicant's method, as recited in Applicant's claim 1, from that of Dirscherl et al. Applicant further suggests that for essentially the same reasons, the apparatus, as recited in Applicant's independent claim 8, is distinguishable from the Dirscherl et al. apparatus.

Claim 35 is similar to claim 1, but it relates to overlaying a UV image over an IR image (instead of over the image of the visible scenery as in claim 1). For the same reasons as stated above with respect to claim 1, Applicant respectfully suggests that the method recited in Applicant's independent claim 35 is distinguishable from Dirscherl et al. Claims 2-6, 9-34, 36-51, 53-57 and 59 respectively depend from independent claims 1, 8 and 35 and are deemed allowable at least by dependency.

The Examiner has also rejected all the dependent claims for lacking novelty over Dirscherl et al., or for being obvious in view of some combination of Dirscherl et al. and one or more of the following: Filopovich (US 5,079,416), Baril (US 5,535,053), Palmer (US 5,687,034), and Hartemann (US 4,835,391). None of these latter publications is more relevant to the independent claims than Dirscherl et al. is, as none of them discusses

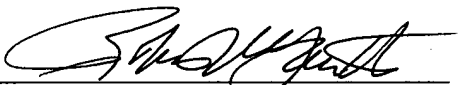
overlaying images of two different spectral ranges. In view of the amendments to the claims, and the above remarks with respect to the independent claims, Applicant considers the Examiner's observations and rejections with respect to the dependent claims moot.

CONCLUSION

Based on the above amendments and remarks, it is respectfully submitted that the claims and thus this application are in condition for allowance. Accordingly, allowance is requested. If there are any remaining issues or the Examiner believes that a telephone conversation with Applicant's attorney would be helpful in expediting the prosecution of this application, the Examiner is invited to call the undersigned at (617) 832-1175.

Respectfully submitted,

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